



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/705,205

11/12/2003

Hyong-uk Choi

Q78412

2939

23373 7590 04/29/2010
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

SAMUEL, DEWANDA A

ART UNIT

PAPER NUMBER

2464

NOTIFICATION DATE

DELIVERY MODE

04/29/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

sughrue@sughrue.com
PPROCESSING@SUGHRUE.COM
USPTO@SUGHRUE.COM

Office Action Summary	Application No. 10/705,205	Applicant(s) CHOI ET AL.	
	Examiner DEWANDA SAMUEL	Art Unit 2464	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 16, 28-41, 48-50 and 53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to the communication filed on 12/24/2009. Claims 1-60 are pending and claims 1-6,16,28-41,48-50, and 53 were elected and claims 7-15,17-27,42-47,51,52, and 54-60 were non-elected.

Response to Arguments

2. Applicant's arguments with respect to claims 1-6,16,28-41,48-50, and 53 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1,2, 28-30, 38, 48 and 49** are rejected under 35 U.S.C. 102(b) as being anticipated by Wu et al. (US Patent 6,332,077).

With regard to claims 1, 28,38 and 48, Wu et al. teach a handoff method r-performed by a mobile station in a wireless local area network, the method comprising the steps of: receiving channel information on access points in an extended service set from a present access point of the mobile station. **Wu et al. disclose having a mobile station receiving information on neighboring APs (access Point) interpreted as a “**

Art Unit: 2464

present access point” within neighboring Basic Service Sets (i.e. a plurality of BSS is defined as extended service sets) from the current associated AP, (see Abstract and fig 6.); and scanning, by the mobile station, channels on the access points by using the channel information to select a new access point of the mobile station. Wu et al. disclose STA continuously monitors the signal strength of APs in its neighborhood and choose the best AP to associate with, (see Abstract).

With regard to claim 2, Wu et al. further teach the channel information corresponding to each access point of the access points in the extended service set comprises an address of the access point information on a channel used by the access point. **Wu et al. disclose the STA receives hopping information interpreted as a “ channel information” of its neighboring APs, (see col.5 lines 14-33).** Wu et al. further disclose the AP use a ETHE-BEACON to convey hopping information which comprise destination address interpreted a “ address of the access point”, (see col.6lines 45-67), and information on one or more access points adjacent to the access point. **Wu et al. disclose the STA receives hopping information interpreted as a “ channel information” of its neighboring APs, (see col.5 lines 14-33).**

With regard to claims 29 and 49, Wu et al. further teach a access point selection unit which selects an access point with a strongest signal as the new access point according

Art Unit: 2464

to a scanning result of the scanning unit. **Wu et al. discloses the STA always chooses the AP with best RSSI value to associate with, (col. 5 lines 30-34).**

With regard to claim 30, Wu et al. further teach a distributed service unit which stores the channel information on the access points. **Wu et al. disclose storing in RSSI value within a database,(see col.5 lines 20-33).** Wu et al. further disclose having hopping information interpreted as a “ channel information” of its neighboring APs, (see col.5 lines 14-33).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 5,16 and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Ala-Laurila et al. (US Patent 6,587,680).

With regard to claims 5,16, 40 , Ala-Laurila et al. teach a handoff method performed by a mobile station in a wireless local area network, the method comprising the steps of:

Art Unit: 2464

selecting a new access point. **Ala-Laurila et al. disclose a mobile terminal 12 selecting a new AP 114, (see col. 9 lines 40 -67) ; outputting a reassociation message to the new access point. (see col. 9 lines 53-67 and fig. 3) a mobile terminal 12 sending a MAC_REASSOCIATE_REQ message to a new AP 114); and receiving, by the mobile station, a reassociation response message from the new access point after a temporary connection is established between the new access point and a previous access point of the mobile station. Ala-Laurila et al. disclose the mobile terminal 12 receives a MAC_REASSOCIATE_RESP_ENH from the new AP 114 after a connection between old AP 14 and the new AP 114 is establish, (see fig. 3).**

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 3 ,4,31-35, 39 and 50** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (US Patent 6,332,077) as applied to claim 1 above, and further in view of Ala-Laurila et al. (US patent 6,587,680).

With regard to claim 3 and 39, However, Wu et al. do not explicitly disclose outputting a handoff alert message to the present access point. **Ala-Laurila et al. disclose**

Art Unit: 2464

having a handover (HO) process 30 where handover signaling (i.e. a HO_Request) interpreted as a “handoff alert message” is sent between a mobile terminal 12 and a old access point (AP) 14,(see fig. 3 and col. 8 lines 49-67), wherein the receiving of the channel information comprises receiving a response message corresponding to the handoff alert message, the response message including the channel information. Ala-Laurila et al. disclose the old AP 14 respond by sending a MAC_DISASSOCIATE message which contains a "ap challenge" and other information interpreted as “ channel information”, (see col. 10 lines 58-67).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have incorporate a handoff request which is taught by Ala-Laurila et al. into roaming mechanism providing notification to the old access point in a uniform and efficient manner. One will have the motivation for a mobile station to transmit a handoff request to an old access point to ensure a complete seamless hand over is done whereby reducing delay during the handover process.

With regard to claim 4, However, Wu et al. do not explicitly disclose n the outputting of the handoff alert message comprises outputting the handoff alert message in response to receiving a weak signal from the present access point. **Ala-Laurila et al. disclose prior to the execution of a handover, the mobile terminal must gather relevant measurements on the frequency that is used by the current access point**

Art Unit: 2464

interpreted as “present access point” before moving to another access point, (see col. 2 lines 15-67 and col. 9 lines 22-39). Ala-Laurila et al. further disclose a handover (HO) process 30 where handover signaling (i.e. a HO_Request) is sent between a mobile terminal 12 and a old access point (AP) 14,(see fig. 3 and col. 8 lines 49-67).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have incorporate a handoff request which is taught by Ala-Laurila et al. into roaming mechanism providing notification to the old access point in a uniform and efficient manner. One will have the motivation for a mobile station to transmit a handoff request to an old access point to ensure a complete seamless hand over is done whereby reducing delay during the handover process.

With regard to claim 31, However, Wu et al. do not explicitly disclose the handoff alert message process unit comprises: a handoff alert message send unit which outputs a handoff alert message to the present access point. **Ala-Laurila et al. disclose having a handover (HO) process 30 where handover signaling (i.e. a HO_Request) interpreted as a “handoff alert message” is sent between a mobile terminal 12 and a old access point (AP) 14,(see fig. 3 and col. 8 lines 49-67); and a handoff alert acknowledgment message receiving unit which receives a response message corresponding to the handoff alert message Ala-Laurila et al. disclose receiving a MAC_DISASSOCIATE message interpreted as a “ response message” from the**

Art Unit: 2464

old AP 14, (see fig.3) , the channel information being included in the response message.

With regard to claim 32, Wu et al. disclose a signal strength detection unit which detects a signal strength of the access points. **Wu et al. disclose STA continuously monitors the signal strength of APs in its neighborhood and choose the best AP to associate with, (see Abstract).**

However, Wu do not explicitly disclose the handoff alert message send unit outputs the handoff alert message in response to a predetermined signal strength of the present access point. . **Ala-Laurila et al. disclose prior to the execution of a handover, the mobile terminal must gather relevant measurements on the frequency that is used by the current access point interpreted as “present access point” before moving to another access point, (see col. 2 lines 15-67 and col. 9 lines 22-39).** **Ala-Laurila et al. further disclose a handover (HO) process 30 where handover signaling (i.e. a HO_Request) is sent between a mobile terminal 12 and a old access point (AP) 14,(see fig. 3 and col. 8 lines 49-67).**

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have incorporate handoff request after a frequency measurement which is taught by Ala-Laurila et al. into Wu roaming wireless network

Art Unit: 2464

whereby providing a efficient and reliable handoff method when a low frequency is detected at the old access point. One will have the motivation to transmit a handoff request after a low frequency measurement to prevent delay of transmitted data within the system whereby finding a better connection with a another access point.

With regard to claims 33 and 50, However, Wu et al. do not explicitly disclose a reassociation message process unit which establishes a reassociation with the new access point. **Ala-Laurila et al. disclose having a mobile terminal 12 sending a MAC_REASSOCIATE_REQ message to a new AP 114) (see col. 9 lines 53-67 and fig. 3).**

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have incorporate an reassociation message which is taught by Ala-Laurila et al. into Wu roaming wireless network whereby maintaining connection information during a reassociation with a new access point. One will have the motivation to use a reassociation service so that relevant connection information is maintain during the association with a new access point.

With regard to claim 34, However, Wu et al. do not explicitly disclose a reassociation message process unit which outputs a reassociation message including information on

Art Unit: 2464

the present access point. **Ala-Laurila et al. disclose having a mobile terminal 12 sending a MAC_REASSOCIATE_REQ message to a new AP 114) (see col. 9 lines 53-67 and fig. 3). Ala-Laurila et al. disclose the MAC_REASSOCIATE_REQ contains information old AP 14, (see Abstract) , and receives a reassociation response message from the new access point in response to a temporary connection being established between the new access point and the present access point. . Ala-Laurila et al. disclose the mobile terminal 12 receives a MAC_REASSOCIATE_RESP_ENH from the new AP 114 after a connection between old AP 14 and the new AP 114 is establish, (see fig. 3).**

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have incorporate an reassociation message which is taught by Ala-Laurila et al. into Wu roaming wireless network whereby maintaining connection information during a reassociation with a new access point. One will have the motivation to use a reassociation service so that relevant connection information is maintain during the association with a new access point.

With regard to claim 35, A mobile station comprising: a handoff alert message process unit which receives channel information on a plurality of access points different from a present access point in an extended service set from the present access point. Wu et al. disclose having a mobile station receiving information interpreted as channel information” on neighboring APs (access Point) interpreted as a “ present

Art Unit: 2464

access point” within neighboring Basic Service Sets (i.e. a plurality of BSS is defined as extended service sets) from the current associated AP, (see Abstract and fig 6.);a scanning unit which scans channels on the access points for a new access point by using the channel information. **Wu et al. disclose STA continuously monitors the signal strength of APs in its neighborhood and choose the best AP to associate with, (see Abstract) ;** an access point selection unit which selects an access point with a strongest signal as the new access point according to a scanning result of the scanning unit. **Wu et al. disclose STA continuously monitors the signal strength of APs in its neighborhood and choose the best AP to associate with, (see Abstract);** a distributed service unit which stores the channel information on the access points. **Wu et al. disclose storing in RSSI value within a database,(see col.5 lines 20-33).** Wu et al. further disclose having hopping information interpreted as a “ channel information” of its neighboring APs, (see col.5 lines 14-33); a signal strength detection unit which detects a signal strength of the access points. **Wu et al. disclose STA continuously monitors the signal strength of APs in its neighborhood and choose the best AP to associate with, (see Abstract).**

However, Wu et al. do not explicitly disclose a reassociation message process unit which establishes a reassociation with the new access point. **Ala-Laurila et al. disclose having a mobile terminal 12 sending a MAC_REASSOCIATE_REQ message to a new AP 114) (see col. 9 lines 53-67 and fig. 3).**

Art Unit: 2464

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to incorporate an reassociation message which is taught by Ala-Laurila et al. into Wu roaming wireless network whereby maintaining connection information during a reassociation with a new access point. One will have the motivation to use a reassociation service so that relevant connection information is maintain during the association with a new access point.

9. Claims 6 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ala-Laurila et al. (US Patent 6,587,680) in view of Wu et al. (US Patent 6,332,077).

With regard to claims 6 and 41, Ala-Laurila et al. further teach wherein the selecting of the new access point comprises: outputting a handoff alert message to the previous access point. **Ala-Laurila et al. disclose having a handover (HO) process 30 where handover signaling (i.e. a HO_Request) interpreted as a “handoff alert message” is sent between a mobile terminal 12 and a old access point (AP) 14,(see fig. 3 and col. 8 lines 49-67);** receiving a response message from the previous access point. **Ala-Laurila et al. disclose receiving a MAC_DISASSOCIATE message interpreted as a “ response message” from the old AP 14, (see fig.3) ,** scanning channels on the access points in the extended service set and selecting an access point with a strongest signal as the new access point. **Ala-Laurila et al. disclose mobile terminal 12 measure control channels of APs in adjacent cells 18 and 118 interpreted as a**

Art Unit: 2464

“ extended service set” ,(see col. 9 lines 25-40). Ala-Laurila et al. further disclose determine a signal strength of the channel and determine a handover is required, (see col. 9 lines 25-40).

However, in combination Ala-Laurila et al. do not teach using the channel information included in the response message; the response message including channel information on access points in an extended service set. **Wu et al. disclose having a mobile station receiving information on neighboring APs (access Point) interpreted as a “ present access point” within neighboring Basic Service Sets (i.e. a plurality of BSS is defined as extended service sets) from the current associated AP, (see Abstract and fig. 6).**

10. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (US Patent 6,332,077) in view of Rom (US Patent 6,360,264).

With regard to claim 36, Wu et al. teach an apparatus for use in a mobile station in a wireless local area network, comprising: a handoff alert message send unit which outputs a handoff alert message to a present access point of the mobile station to collect channel information on a plurality of access points different from the present access point in an extended service set. **Wu et al. disclose having a mobile station receiving information on neighboring APs (access Point) interpreted as a “ present access point” within neighboring Basic Service Sets (i.e. a plurality of**

Art Unit: 2464

BSS is defined as extended service sets) from the current associated AP, (see Abstract and fig. 6).

However, Wu et al. do not explicitly disclose a handoff alert acknowledgment message receiving unit which receives a response message corresponding to the handoff alert message, the channel information being included in the response message. **Rom disclose having a node receiving a packet from a old access point, information containing operating parameters such a the frequency of the channel on which a selected access point operates on, (see col. 5 lines 18-40).**

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to incorporate response packet with frequency information which is taught by Rom into Wu et al. roaming wireless network efficiently evaluating the new access channel conditions whereby ensure a reliable connection. One will have the motivation to send channel information on perspective access points in order to detect a reliable connection within a wireless LAN.

With regard to claim 37, Wu et al. further teach a scanning unit which scans for a new access point using the channel information. **Wu et al. disclose STA continuously monitors the signal strength of APs in its neighborhood and choose the best AP to associate with, (see Abstract).**

11. **Claim 53** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (US Patent 6,332,077) in view of Ala-Laurila et al. (US Patent 6,587,680).

With regard to claim 53, Wu teach a mobile station for use in a wireless local area network, comprising: means for receiving channel information on an access point different from a present access point in an extended service set from the present access point of the mobile station. **Wu et al. disclose having a mobile station receiving information on neighboring APs (access Point) interpreted as a “ present access point” within neighboring Basic Service Sets (i.e. a plurality of BSS is defined as extended service sets) from the current associated AP, (see Abstract and fig 6.**; means for scanning channels on the access point different from the present access point for a new access point by using the channel information. **Wu et al. disclose STA continuously monitors the signal strength of APs in its neighborhood and choose the best AP to associate with, (see Abstract).**

However, Wu et al. do not explicitly disclose establishing a reassociation with the new access point. **Ala-Laurila et al. disclose having a mobile terminal 12 sending a MAC_REASSOCIATE_REQ message to a new AP 114) (see col. 9 lines 53-67 and fig. 3).**

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have incorporate an reassociation message which is

Art Unit: 2464

taught by Ala-Laurila et al. into Wu roaming wireless network whereby maintaining connection information during a reassociation with a new access point. One will have the motivation to use a reassociation service so that relevant connection information is maintain during the association with a new access point.

Prior Art

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee (US patent 6,061,563)

Lee et al. (PG PUB 2004/0039817)

Heinonen et al. (US patent 7,103,359)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEWANDA SAMUEL whose telephone number is (571)270-1213. The examiner can normally be reached on Monday- Thursday 8:30-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Q. Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2464

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/
Supervisory Patent Examiner, Art
Unit 2464

/DeWanda Samuel/
Examiner, Art Unit 2464
4/27/2010